



*Submitted Testimony Provided the*

## **Senate Utilities Committee**

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### **PCBs in Electric Distribution Equipment**

Thank you for the opportunity to provide written testimony regarding the use of transformers and other equipment in electricity distribution that may contain Polychlorinated Biphenyls (PCBs).

Kansas Municipal Utilities (KMU) is the statewide association representing 158 municipal electric, natural gas, water and wastewater utilities. Formed in 1928, KMU members currently provide utility services to over one million Kansans.

As you are aware, it was concern over the toxicity and persistence in the environment of PCBs that led Congress in 1976 to enact §6(e) of the Toxic Substances Control Act (TSCA) that included, among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs. The act effectively legislated true "cradle to grave" management of PCBs in the United States.

In Kansas, 120 cities own and operate a municipal electric utility. Over the past several decades, exposure to PCB-containing transformers and equipment in these municipal systems has varied widely by the size of the utility and the age of its distribution system. As such, the association surveyed a number of members in response to the Kansas Legislative Research Department's questions on PCBs. The survey was meant to provide a representative sampling of the KMU membership and the include utilities of various sizes and from several regions across the state.

We believe the responses indicate an intimate working knowledge of existing PCB regulations by the employees of member systems. In addition, the survey provides an excellent illustration of the tremendous amount of time and

resources that have been allocated by municipal electric utilities in Kansas to address potential PCB contamination issues. The actual survey responses to each question are provided below.

### **Extent to Which the Utility Can Identify Transformers Which Contain PCBs and Their Location in the Distribution System.**

- “No PCB transformers or other electrical devices left in the system.”
- “The city maintains a computer mapping system which identifies all system facilities including transformers, capacitors and regulators. Map symbols used are tied to database attributes which contain all data about the particular facility, including serial numbers, PCB levels, test date, etc.”
- “The [utility] has identified and removed all equipment containing more than 48 parts per million (ppm) of PCB.”
- “We have test results for all but eight transformers on our system. All transformers with PCBs have been retrofit and retested.”
- “We can identify any and all transformers on our system for PCB content by lab result or manufacturer certification.”
- “We can identify all of our transformers and their location.”
- “Unless the tag says “Non-PCB,” you must assume that it contains PCB or until you test it and certify it. (We also test any transformer that has a manufacturer’s date earlier than 1992, because we have found re-manufactured transformers to contain PCBs).”

### **2. Number of Transformers in the Distribution System Containing PCBs**

- “Zero.”
- “We presently have no equipment containing more than 48 ppm PCB.”
- “Of the 2,024 total units, 455 or 22.4% contain some PCB contamination ranging from <1 to 49 ppm. No facilities exists with >50 ppm.”
- “We have approximately 5,000 transformers on our system and have no transformers over 50 ppm PCB, due to efforts to identify those and either retrofit or replace them. Of the units we have tested, the ones remaining in service, less than 50 ppm, are as follows,
  - 188 transformers at 1-2 ppm
  - 250 transformers at 3-10 ppm
  - 60 transformers at 11-20 ppm
  - 43 transformers at 21-30 ppm
  - 17 transformers at 31-40 ppm
  - 1 transformer at 41 ppm
  - 1 transformer at 42 ppm
  - 1 transformer at 46 ppm(a total of 561 transformers from 1 to 46ppm PCBs)”
- “240 transformers in our distribution system containing PCBs, all are below 50 ppm. Of the 240 transformers:

- 189 measured 1-10 ppm
- 30 measured 11-20 ppm
- 13 measured 21-30 ppm
- 4 measured 31-40 ppm
- 4 measured 41-50 ppm”
- “We have only 1 PCB-Contaminated (256ppm) transformer located at the power plant.”
- “None that we know of, but we must assume there [are some remaining]. We must keep records for 10 years after the last transformer has become clean.”

### **3. Problems Disposing of Transformers Containing PCBs When They Are Replaced**

- “We have had no problems since all of our transformers have been retrofilled and with tests showing PCBs below 49 ppm.”
- “None . We replace with new ones or, in the past, have retro-filled the transformer. We have since eliminated the retrofills. For the transformers that have PCBs, Safety-Kleen removes them and incinerates them and we are given a certificate of destruction.”
- “We contracted with a company in Coffeyville, Kansas to remove any equipment containing more than 49 ppm PCB.”
- “We contract with Solomon Electric for all disposal or remanufacture of these facilities. The company provides all data pertinent to our data base for continued compliance.”
- “The transformer rebuilder that takes our surplus transformers, will not take anything over 49 ppm, so for us it is not a problem.”
- “We have experienced no problems in disposing of our transformers.”
- “Proper disposal by disposal companies has been an issue. We have had to pay multiple times to dispose of the same items and the clean-up costs associated with improper disposal by licensed disposal companies. Currently disposal companies are getting fewer and fewer, causing cost to go back up and final disposal within the one year regulatory requirement could be hard to meet.”

### **4. Describe Actions to Replace PCB Transformers Over the Past Ten Years, the Net Result of Those Actions and Future Plans**

- “We began testing transformers for PCBs on March 11, 1985 and completed that process on October 2, 1991. As a result of that testing, the city began a replacement program, with 608 PCB free transformers installed to date.”
- “We have identified and removed all equipment containing more than 48 ppm PCB and require a clean certificate for all new purchases. We track by SER# and location of equipment.”

- “Most of our transformer testing and retro-fitting program was completed over 10 years ago. Occasionally, we have to have a test done, but there are several companies who provide this service.”
- “The city was once caught in a paperwork violation which resulted in a consent order. We have since been compliant and really don’t have any problems. Our situation began when one of our street and alley mowers struck the ¼” drain plug on a transformer stored on the ground at our warehouse yard. This was only a 15 kilovolt pole mount but the oil leaked out on the ground. Our administrator at the time called in a report so the area would be handled and cleaned up properly. We tested the oil and soil samples which had a high PCB content (I think around 1500 ppm). We contracted for the clean up and eventually hauled three large trucks (18 wheelers) of soil to Georgia for disposal. The violations came when the resulting audit turned up some reporting that did not meet regulations (actually, in hindsight, we were seriously lax in our tracking and reporting procedures). In lieu of a major fine, we entered a Consent Order to get out of the \$36,000 in fines. To meet the consent order, we physically tested every facility in our system and subsequently removed and had destroyed every transformer with PCB’s greater than 50 ppm. We implemented a very good mapping and data base system to track all PCB’s and facilities on our system. As for our future plans, we have made the initial investment to be compliant and will remain that way. Our system works well and unless regulations change we will continue to operate within compliance.”
- “Since 1986, when we started an aggressive PCB program, we have spent quite a bit of money; over \$62,000.00 in analytical testing fees and in excess of \$270,000.00 on retro filling, disposal, and labor for collecting samples. Labor costs to retro fill and other transformer work is unknown. The result is that we know what we are dealing with and how to treat any unexpected release of fluid from these transformers and we have no hidden liability. As those units, that have any concentration of PCB’s in them, come into stock for replacement or service we generally retire them.”
- “The city, in 1993, started a proactive testing and identification program. 1,941 electrical devices were tested for PCB levels verified over a ten year period. 1,318 transformers were identified with unknown PCB levels and tested. Average laboratory cost was \$12.00 per sample (\$16,000.00 total). Average testing time for 2 man crew and bucket truck was 30 minutes per test (1000 hours @ \$150/hr.= \$150,000.00). The City decided to retrofit/reclassify 11 large transformers (average cost \$20,000 each x 11 = \$220,000.00 total) to make them non-PCB. The City also decided to dispose of all small transformers (2.5 to 500KVA) with > 40ppm of PCB’s. 174 transformers were identified with >40ppm and disposed (average cost of \$600.00 each x 174 for a total of \$104,000.00). 17 large capacitors

were also disposed (average cost of \$6,000.00 each for a total of \$102,000.00). We found about 10% of all electrical devices tested had some level of PCB's. 22 transformers (or 13% of the 174 transformers) were classified as PCB transformers (>500ppm) and 152 transformers were classified as PCB-Contaminated (>50ppm but <500ppm). The City has spent over \$700,000.00 over the last ten years to comply with the regulations and to try and get out of the PCB business."

- "Every time a transformer is taken down or moved, it goes into our PCB shed where we assign a test number. Then we take a test and send it to a certified lab and the lab sends us the results which we can then certify that the transformer is either 'Non-PCB' or contains PCB. Anything over 50 parts per million (ppm), we date with time of test, then we date the transformer for destruction. We have one year to have the transformer incinerated by Safety-Kleen. Anything 49 ppm or under, we can sell to transformer salvage or we can put it back in service with a certified decal containing the serial numbers, test numbers and dates for future salvage or use. There are a number of unknown PCB's still on our Distribution System, such as CT's, PT's, oilfield bushings and ballasts that we must assume contain PCB's, unless otherwise marked. To our knowledge, our transformers and capacitors are clean. We can assume that 90% of our Distribution System is clean since we have switched over from a 2400 to a 7620 system. (We have had a couple of 14400 transformers that have come back with 50 ppm)."

I again thank the committee for the opportunity to provide written testimony. Should you have any questions, comments or concerns regarding the testimony, please feel free to contact me at the phone number or addresses below.



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